SANTA CRUZ BIOTECHNOLOGY, INC.

CD4 (H129.19): sc-19642

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The T cell receptor (TCR) is a heterodimer composed of either α and β or γ and δ chains. CD3 chains and the CD4 or CD8 co-receptors are also required for efficient signal transduction through the TCR. The TCR is expressed on T helper and T cytotoxic cells that can be distinguished by their expression of CD4 and CD8; T helper cells express CD4 proteins and T cytotoxic cells display CD8. CD4 is also expressed on cortical cells, mature medullary thymocytes, microglial cells and dendritic cells. CD4 (also designated T4 and Leu 3), is a membrane glycoprotein that contains four extracellular immunoglobin-like domains. The TCR in association with CD4 can bind class II MHC molecules presented by the antigen-presenting cells. The CD4 protein functions by increasing the avidity of the interaction between the TCR and an antigen-class II MHC complex. An additional role of CD4 is to function as a receptor for HIV.

REFERENCES

1. Maddon, P.J., et al. 1987. Structure and expression of human and mouse T4 genes. Proc. Natl. Acad. Sci. USA 84: 9155-9159.
2. Arthos, J., et al. 1989. Identification of the residues in human CD4 critical for the binding of HIV. Cell 57: 469-481.
3. Healey, D., et al. 1990. Novel anti-CD4 monoclonal antibodies separate human immunodeficiency virus infection and fusion of $CD4^+$ cells from virus binding. J. Exp. Med. 172: 1233-1242.
4. Allison, J.P., et al. 1991. The immunobiology of T cells with invariant γδ antigen receptors. Annu. Rev. Immunol. 9: 679-705.
5. Janeway, C.A., Jr. 1992. The T cell receptor as a multicomponent signalling machine: CD4/CD8 coreceptors and CD45 in T cell activation. Annu. Rev. Immunol. 10: 645-674.

CHROMOSOMAL LOCATION

Genetic locus: Cd4 (mouse) mapping to 6 F2.

SOURCE

CD4 (H129.19) is a rat monoclonal antibody raised against A.TH. mouse CTL clone A15.1.17.

PRODUCT

Each vial contains 200 µg IgG_{2a} in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available azide-free for biological studies, sc-19642 L, 200 µg/0.1 ml.

CD4 (H129.19) is available conjugated to either phycoerythrin (sc-19642 PE) or fluorescein (sc-19642 FITC), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM.

In addition, CD4 (H129.19) is available conjugated to either APC (sc-19642 APC) or APC-Cy7 (sc-19642 APCC7), 100 tests in 2 ml, for IF, IHC(P) and FCM.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

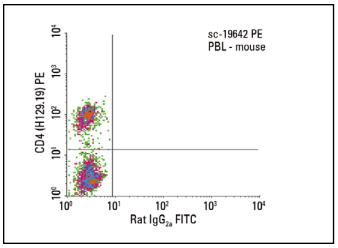
CD4 (H129.19) is recommended for detection of CD4 of mouse origin by immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 µg per 1 x 10^6 cells).

Suitable for use as control antibody for CD4 siRNA (m): sc-29997, CD4 shRNA Plasmid (m): sc-29997-SH and CD4 shRNA (m) Lentiviral Particles: sc-29997-V.

Molecular Weight of CD4: 54 kDa.

Positive Controls: mouse thymus extract: sc-2406 or WEHI-231 whole cell lysate: sc-2213.

DATA



CD4 (H129.19) PE: sc-19642 PE. FCM analysis of mouse peripheral blood leukocytes. Quadrant markers were set based on the isotype control, normal rat IgG_{2a}-PE: sc-2872.

SELECT PRODUCT CITATIONS

1. Karamitros, D., et al. 2010. Differential geminin requirement for proliferation of thymocytes and mature T cells. J. Immunol. 184: 2432-2441.
2. Helsby, M.A., et al. 2014. CiteAb: a searchable antibody database that ranks antibodies by the number of times they have been cited. BMC Cell Biol. 15: 6.
3. Wang, X., et al. 2015. Efficacy of thymosin α1 and interferon α for the treatment of severe acute pancreatitis in a rat model. Mol. Med. Rep. 12: 6775-6781.
4. Matsui, K., et al. 2015. Langerhans cell-like dendritic cells stimulated with an adjuvant direct the development of Th1 and Th2 cells *in vivo*. Clin. Exp. Immunol. 182: 101-107.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

CONJUGATES

See **CD4 (MT310): sc-19641** for CD4 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.